## REMARKS

Applicants acknowledge the Office Action dated July 1, 2003 and respectfully request reconsideration of the application in view of the above amendments and remarks set forth below. Claim 1 has been amended to include the limitation of claim 2. As such, claim 2 has been cancelled. Claims 1, 3-14 are pending in the present application.

Claims 1 and 3-14 have been rejected under 35 U.S.C. § 103(a) as being upatentable over Applicants' Admitted Prior Art (AAPA) in view of U.S. Patent No. 5,878,496 to Liu et al. ("the Liu reference"). Applicants respectfully traverse this rejection.

Amended claim 1 is directed to a process for forming a metal cylindrical bearing roller consisting of the steps of: 1) obtaining a hardened metal cylindrical blank having end face surfaces, a lateral surface defining an outer diameter, and a centered circular bore, the bore having an inner surface defining an inner diameter; 2) honing the inner surface of the bore having a specified inner diameter, thereby forming an inner bearing surface; and 3) hard turning the lateral surface of the blank to a specified outer diameter, thereby forming an outer bearing surface concentric with the inner bearing surface, wherein the hard

turning the lateral surface of the blank further includes forming a radial crown thereby forming a metal cylindrical bearing roller.

None of the references of record, taken alone or in combination, teach or suggest a process for forming a metal cylindrical bearing roller wherein the lateral surface of the blank includes a radial crown as recited in amended claim 1. The Examiner has used the combination of the Liu reference and the AAPA to teach that it is inherent that a radial crown of a bearing is formed in the formation process (Office Action of 7/1/03, pg. 3). However, it is well-established that arguments based on inherent properties cannot stand when there is no supporting teaching in the prior art. *See In re Spormann*, 363 F.2d 444, 448 (C.C.P.A. 1966); *see also In re Dillon*, 919 F.2d 688 (Fed. Cir. 1990). Nothing in the Liu reference teaches a process for forming a cylindrical roller bearing where the inner surface of a bore is honed, the lateral surface of the blank is hard turned and radially crowned.

Specifically, as best seen in FIG. 3 of the Liu reference, the outer diameter of the ring is flat, not crowned. If a crowned lateral surface was contemplated in the Liu reference, it would have been disclosed, especially considering the amount of specific detail provided with regard to the dimensional parameters required to yield the desired prestresses below the surface of the

bearing race (Col. 4, lines 12-18). Therefore, the Liu reference does not teach or suggest a process for forming a bearing roller having a radially crowned lateral surface.

Further, none of the references of record teach or suggest a process for forming a metal cylindrical bearing roller wherein an inner surface if the bore is honed to a specified inner diameter as recited in claim 1. The Examiner stated that the Liu reference teaches turning, facing, milling, boring, broaching, drilling the inner surface of the bore (Office Action, pg. 3). Even though honing the inner surface of the bore was not specifically set forth in the list provided above, the Liu reference does include a phrase that allows for the use of *other related techniques for material removal* (Col. 9, lines 40-41). Since a honing technique is mentioned in the description of the prior art, the Examiner interpreted this particular italicized phrase in as including the honing referred to in claim 1 (Col. 1, line 45).

However, not only does the Liu reference fail to suggest honing the inner surface of the bore, it actually teaches away from the use of a honing technique. *See In re Gurley*, 27 F.3d 551, 554 (Fed. Cir. 1994). While the Liu reference does mention various types of finishing techniques which include "grinding, honing, lapping, polishing, electropolishing and abrasive superfinishing," it also

highlights the drawbacks of using such techniques. In particular, the Liu reference states that the amount of material removed by using such techniques "cannot be controlled in a manner that predictable and controllably alter certain surface integrity characteristics, such as residual stresses in the surfaces." (Col. 1, lines 49-55). Thus, it would be incorrect to assume that the "*other related techniques for material removal*" is referring to a honing technique given the disclosure of the Liu reference.

Since the references of record do not teach or suggest a process where: 1) an inner surface is honed to a specified inner diameter; and 2) a radial crown is formed on the lateral surface of the bearing, Applicants request that the rejection of claim 1 be withdrawn. As claims 3-14 depend either directly or indirectly from claim 1, Applicants request that the rejection of these claims be withdrawn for at least the same reasons set forth above.

**Conclusion**

In view of the foregoing amendment and remarks, Applicants submit that claims 1 and 3-14 are patentable over the references of record and are in condition for allowance. In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional

payment of fee, Applicants hereby conditionally petition therefore and authorize that any changes be made to Deposit Account No. 10-0223.

Should the Examiner feel that there is any unresolved issues that remain in this case, the undersigned may be contacted at the telephone number listed below to arrange for an issue resolving conference.

Respectfully submitted,

10/1/03
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